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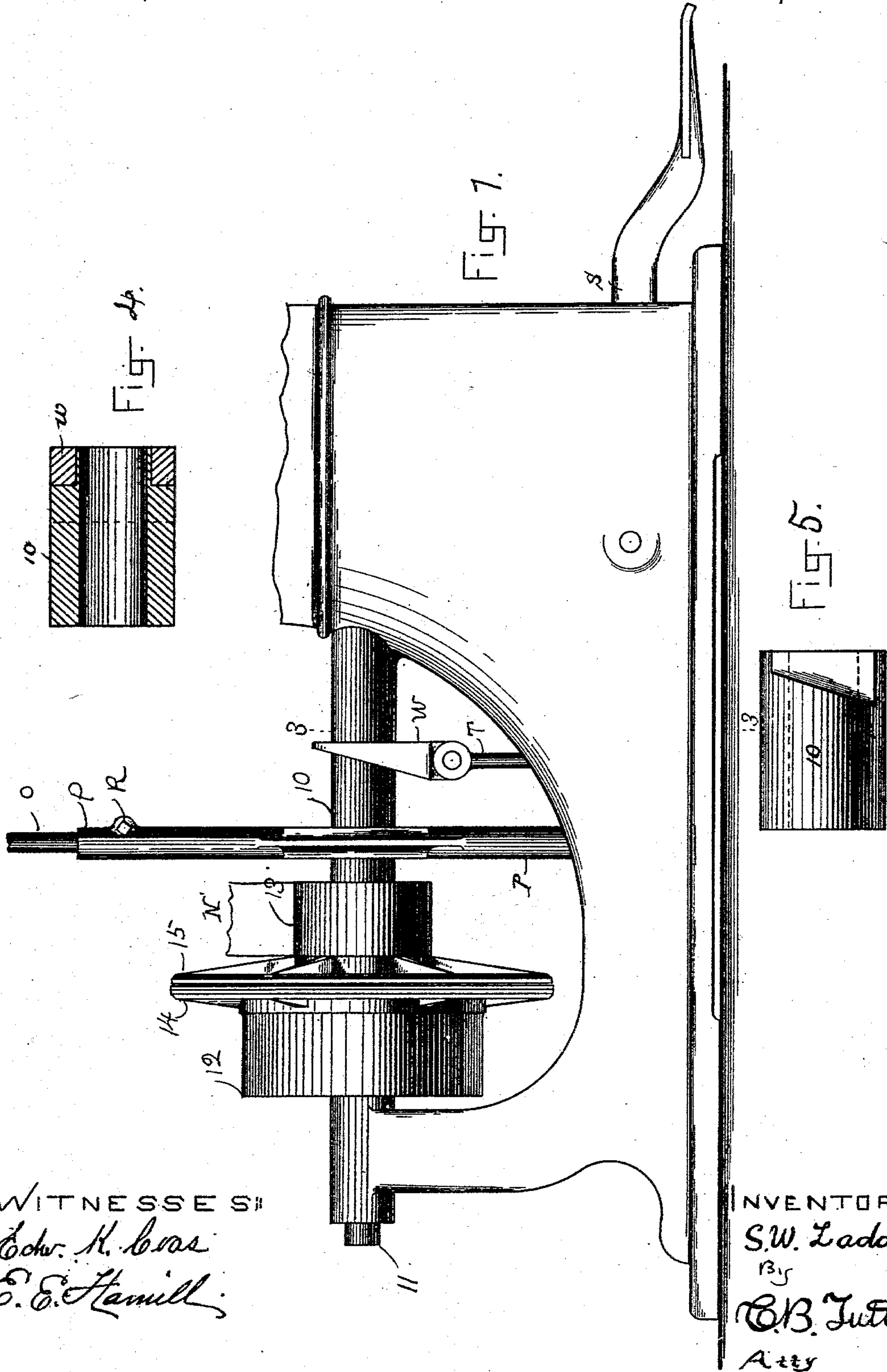
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S. W. LADD.

STARTING AND STOPPING MECHANISM FOR LASTING MACHINES.

No. 510,972.

Patented Dec. 19, 1893.



WITNESSES
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(No Model.)

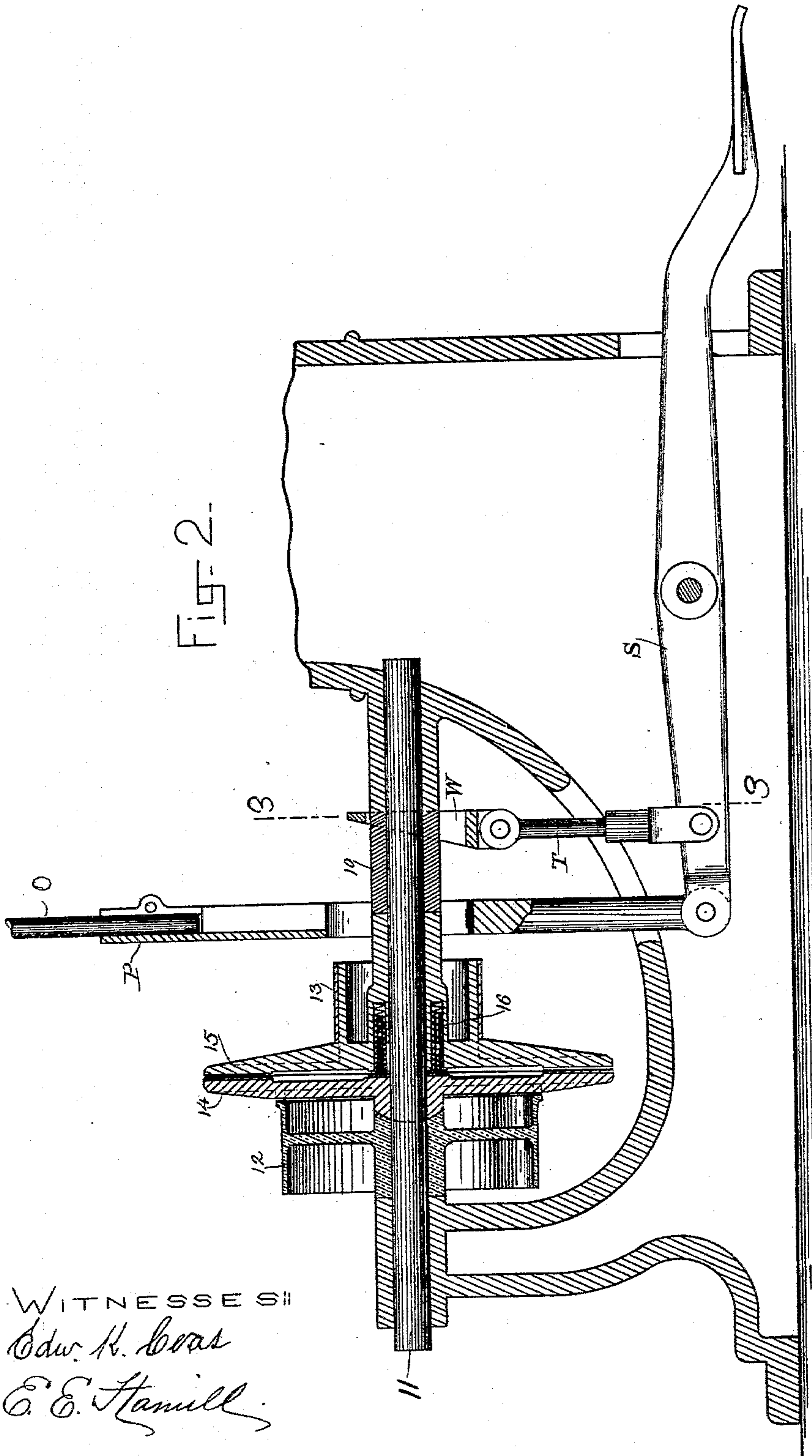
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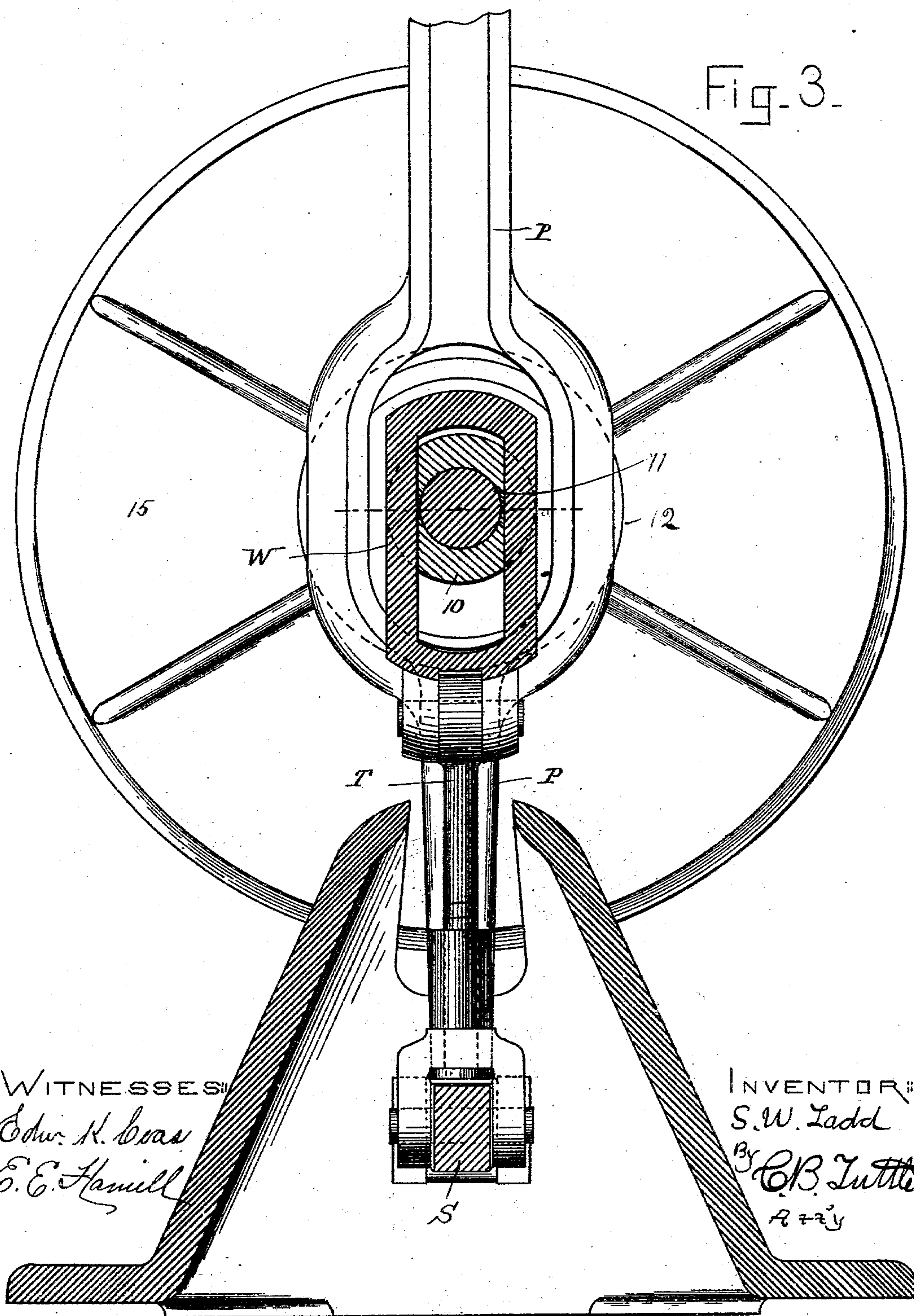
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Fig. 3.



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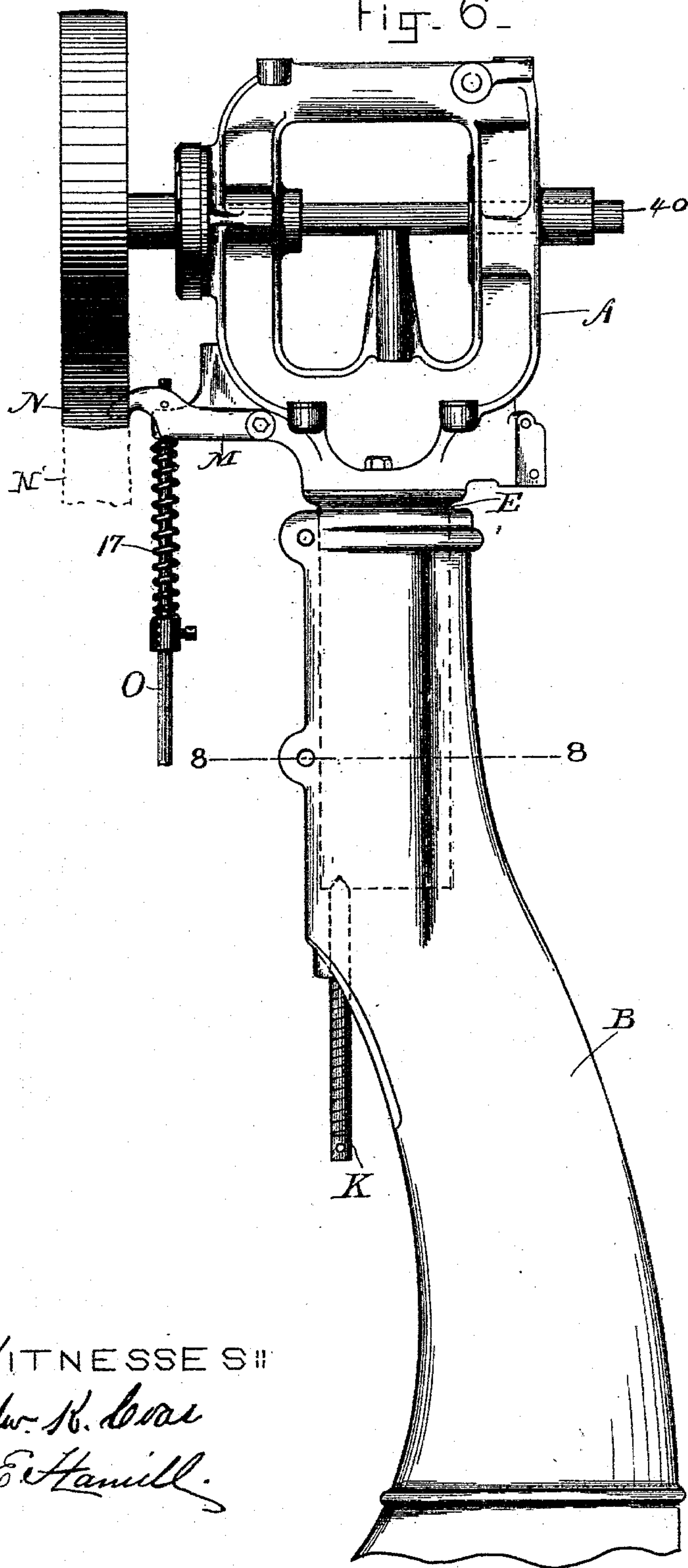
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Fig. 6.



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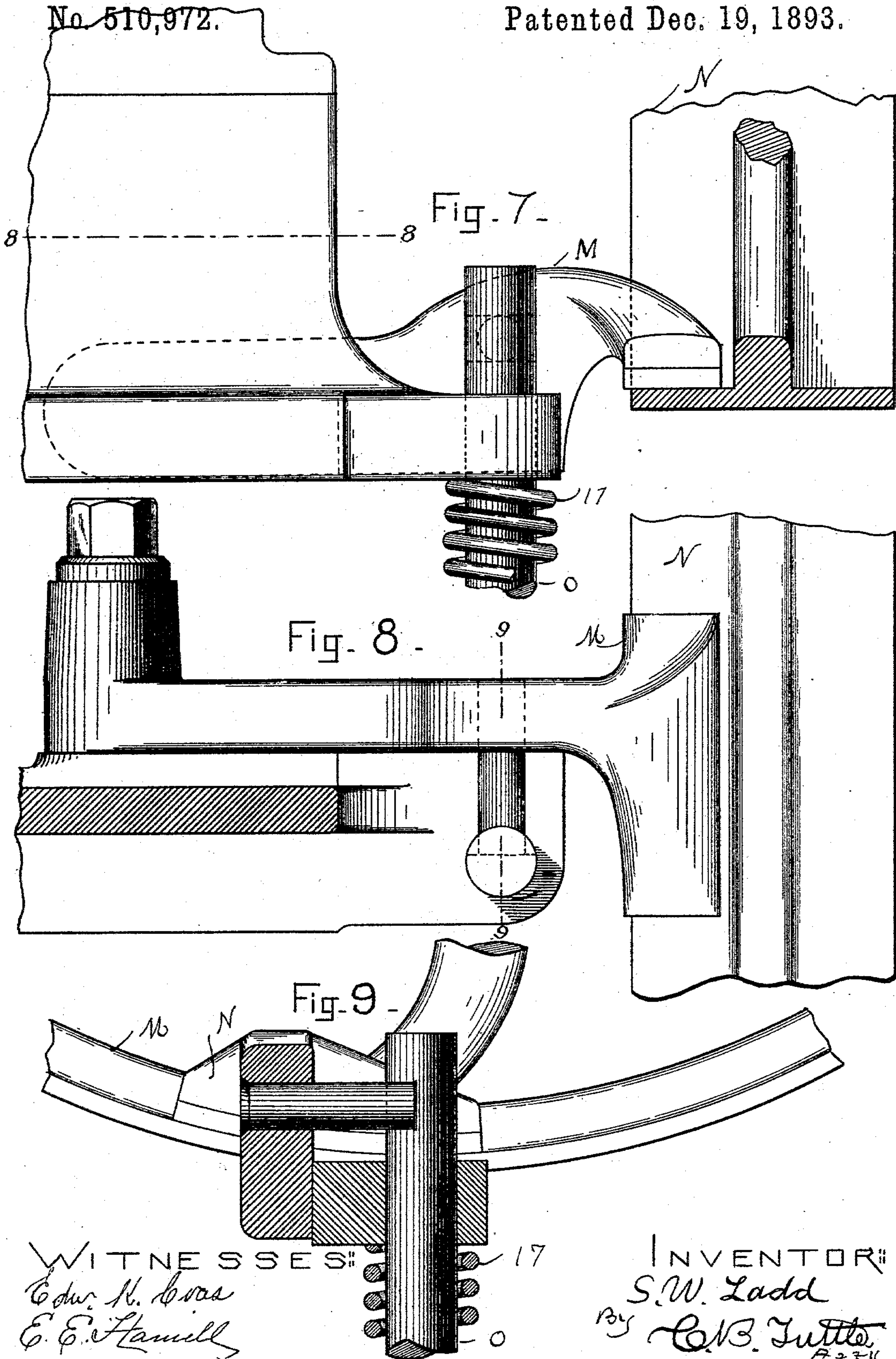
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UNITED STATES PATENT OFFICE.

SHERMAN W. LADD, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR TO
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STARTING AND STOPPING MECHANISM FOR LASTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 510,972, dated December 19, 1893.

Application filed November 21, 1890. Serial No. 372,234. (No model.)

To all whom it may concern:

Be it known that I, SHERMAN W. LADD, of Somerville, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain Improvements in Starting and Stopping Mechanism in Lasting-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in machines for lasting boots and shoes. It is an improvement on the invention shown and described in Letters Patent of the United States, No. 423,922.

It consists mainly of improvements in matters of construction and pertains to the operating mechanism of said machine.

In the accompanying drawings, Figure 1 is a side elevation representing the pedestal or base portion of the machine column and parts of the machine operating mechanism supported thereby. Fig. 2 is a central vertical section of Fig. 1. Fig. 3 is a section of line 3, 3, of Fig. 1. Figs. 4 and 5 represent details connected with Fig. 1. Fig. 6 is a side elevation showing the main portion of the machine supporting column, the machine head and its main driving shaft. (The operating parts, or lasting devices, supported on the machine head, in operation, are not shown.) Figs. 7, 8 and 9 are made on an enlarged scale. Fig. 7 is an elevation partly in section showing the brake shoe employed for stopping the machine. Fig. 8 is a plan view partly in section, taken on the line 8—8 of Fig. 7, showing the same mechanism. Fig. 9 is a sectional view taken on the line 9—9 of Fig. 8.

In Letters Patent of the United States No. 423,922, the construction and operation of the mechanisms for performing the work of lasting the boot or shoe are described in detail. Reference is hereby had to that specification for a description of the parts not shown and described in this specification and in this specification such parts only of the machine are described and represented in the drawings as are necessary in order to present clearly the construction and arrangement of the parts embodying this, my present inven-

tion, and the relation and connection of such parts with the machine as a whole.

In Letters Patent No. 423,922 the working parts of the machine are represented, mounted on an irregularly formed frame work having projections and journals suitable for receiving said working parts, the frame work being, in that application, designated the machine head. In this, my present application, the said head is represented and designated by the letter, A. The operating parts, commonly supported on the head are not shown.

It will be understood that the machine head is mounted upon a vertical column which column has its base preferably resting upon the floor of the apartment containing the machine and in operating the machine the workman standing upon the floor, holding the shoe in his hand, presents it upward to the lasting devices on the machine head for the lasting operation.

It may be here stated that the shoe is prepared for lasting by first putting the upper on to the last, drawing it over at the toe, and preferably at the sides also, and there securing it with tacks or other fastening devices. The shoe is then presented to the machine lasting devices and the further work of stretching the upper over the last and securing it to the shoe inner-sole necessary to complete the lasting operation is performed by the machine lasting devices. During this operation the shoe is supported in the hands of the workman and moved about as required to present the various portions of the upper in position to receive the bite of the lasting pinchers. Portions of the upper are presented to the pinchers, successively, and the work of lasting is carried on progressively until completed.

In carrying out the operation it is desirable to shift the shoe about, more or less, in order to present such portions of the upper as it is desirable to have receive the next progressive pulling and straining action of the pinchers. It is necessary for the workman to constantly observe the progress of the work and be governed, more or less, by the general progress of the lasting operation, as a whole, in determin-

ing what portion of the upper shall next be presented to the pinchers, the object being to govern and direct the progressive portions of the work so as to properly strain and draw all portions of the upper into conformity with the last, during the completion of the lasting operation. The time required by the operator to study the effect of the last action of the pinchers in relation to the general work performed and to be performed, is varying constantly and consequently the time between the release of the upper and the next presentation thereof to the pinchers is constantly varying. It all depends upon, the will and desire of the workman and it is found desirable to have the machine subjected in its movements, so far as possible, to the will of the workman also, to the end that it may be started and stopped promptly, as required. In carrying out this object of my present invention, I have made a certain improvement in the starting and stopping mechanism of the machine which I now proceed to describe as follows: In the pedestal or base portion of the machine column is journaled a shaft, 11. (See Figs. 1, 2 and 3.) On said shaft is a fixed pulley, 12, to which is applied a driving belt from any suitable source for revolving the shaft. On the shaft is a loose pulley, 13, from which driving power is transmitted to the main shaft of the machine, 40, (Fig. 6,) through a belt, N', which, to that end, passes over the pulley, 13, on shaft, 11, and the pulley, N, on shaft, 40. The pulley, 12, carries a friction disk, 14, and the pulley, 13, carries a co-operating friction disk, 15. The pulley, 13, is arranged to permit movement on the shaft, 11, longitudinally, to the end that it may be moved in one direction to contact the friction plates, 14, 15, for starting the machine and in the opposite direction for separating the friction plates and thus promptly release the machine from its driving power. On the machine head, (see Fig. 6,) is a brake shoe, M, arranged to engage the machine pulley, N, for the purpose of counteracting the momentum of the machine and thus effect a prompt stopping of the lasting devices. To this end the brake shoe has a vertical reciprocating movement imparted to it in one direction for engaging the pulley, N, and in the opposite direction for releasing its hold upon the pulley.

The reciprocating longitudinal movements of the pulley, 13, for starting and stopping the machine and the reciprocating vertical movements of the brake shoe, M, for releasing and engaging the machine pulley, N, are effected simultaneously by the workman and for this purpose, I have arranged a mechanism to be operated by the foot of the workman and which I describe as follows. On the machine base is a pivoted lever, S. To this lever is pivoted one end of a connecting rod, P. In the opposite end of the rod, P, is a rod, O, which connects at its top end with the brake shoe, M, (see Fig. 6) and projects its bottom end into a suitable receiving hole in the rod,

P. (See Fig. 2.) The rod, P, is grooved longitudinally at its top and provided with a clamp screw, R (Fig. 1), which may be operated to clamp the rod, P, firmly about the rod, O, and thus establish a fixed connection between the lever, S and brake shoe, M, that permits being extended and contracted to accommodate the hereinbefore described vertical adjustments of the machine head and lasting devices. Obviously the workman, by placing one foot upon the forward end of lever, S, and depressing the same, lifts upwardly the brake shoe, M, thereby releasing its hold on the machine wheel, M. On the rod, O, is a spring, 17, (Fig. 6,) interposed between the machine head and a collar fixed on rod, O, whereby the rod, and consequently the brake shoe, M, is depressed and held in contact with the machine wheel, N, whenever the lever, S, is not depressed by the foot of the workman. Also connected with the lever, S, (Fig. 2), is a link, T, and pivotally supported on the top end of said link is a wedge, W. Said wedge bears its inclined face against a corresponding cam faced sleeve, 10. The sleeve, 10, bears its opposite end in sliding contact with the hub of friction clutch, 15, and permits movement longitudinally on the shaft, 11, to the end that when the wedge, W, is moved upwardly by an operation of the lever, S, it forces forward the sleeve, 10, carrying before it the clutch, 15, and engages the clutch disk, 15, with the clutch disk, 14, to set the machine in operation. This upward movement of the wedge, W, is effected by the foot of the workman depressing forward end of lever, S. From the foregoing it will be observed that the upward movement of brake shoe, M, to release machine wheel, N, (Fig. 6,) and the upward movement of wedge, W, to engage friction disks, 14, 15, take place simultaneously as the workman depresses the forward end of lever, S. In the hub of friction disk, 15, (Fig. 2,) are springs, 16, which operate to separate the friction disks, 14, 15, whenever the wedge, W, drops sufficiently to permit the spring to force backwardly the disk, 15, the spring being, for this purpose, made to bear one end against the hub of disk, 14, and its opposite end in the hub of disk, 15. The wedge, W, is depressed by action of spring, 17, (Fig. 6,) which takes place as before described and depresses rod, P, and consequently the rear end of lever, S, whenever pressure is relieved by removal of the foot of the workman from said lever. Obviously the disengagement of disks, 14, 15, to stop the machine and the engagement of brake shoe, M, with machine wheel, N, to stop the working parts of the machine take place simultaneously, as the forward end of lever, S, is allowed to resume its normal elevation.

In practice it is found that the workman by depressing the lever, S, gradually, may allow a more or less extended frictional sliding contact to take place between the disks, 14, 15, as the machine begins to move and thus grad-

uate, to some extent, the time consumed in effecting a complete revolution of the machine wheel, N, and consequently, in this way, the movements of the lasting devices may be more or less varied, it being understood that a complete revolution of wheel, N, effects one complete operation of the lasting devices. It is also found in practice that with this arrangement of the brake shoe and treadle connecting devices the machine is stopped with promptness and obeys quite readily the desire of the workman, as manifested in removing his foot or the depressing force from lever, S.

I claim—

In a lasting machine, the combination of a

wheel N, a brake M adapted to bear thereon, a treadle, a clutch mechanism through which the wheel N is driven, mounted upon a shaft 11, a rod connecting the brake with the treadle 20 and straddling the said shaft, 11, and the wedge W connected with the treadle and adapted to force into engagement the two members of the clutch mechanism, substantially as set forth. 25

Signed at Boston this 2d day of November, A. D. 1890.

SHERMAN W. LADD.

Witnesses:

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